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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,258

05/11/2006

Wolf-Dieter Wichmann

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EXAMINER

MCGRAW, TREVOR EDWIN

ART UNIT

PAPER NUMBER

3752

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/579,258	<b>Applicant(s)</b> WICHMANN, WOLF-DIETER	
	<b>Examiner</b> Trevor E. McGraw	<b>Art Unit</b> 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2-10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-10 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Examiner's Comment***

Examiner acknowledges the cancellation of Claim 11.

### ***Allowable Subject Matter***

The indicated allowability of claims 2-6 are withdrawn in view of the Guenter reference. Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Guenter (DE 3908963).

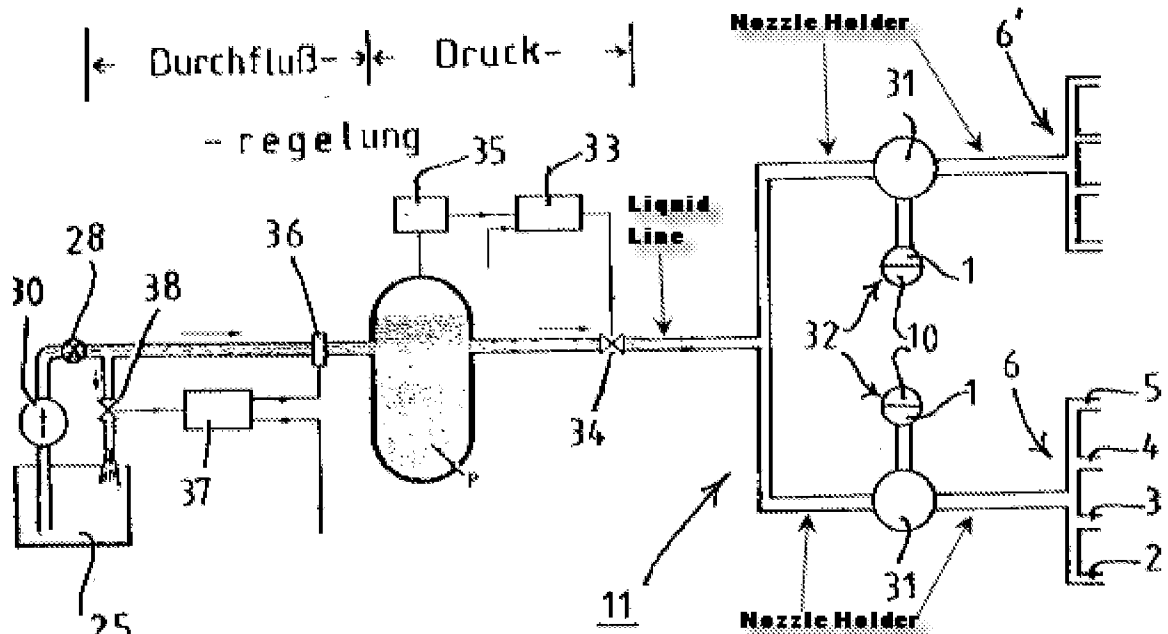
In regard to Claim 2, Guenter teaches a sprayer for spraying liquids (apparatus in Figure) comprising a carrier liquid tank (24), a carrier liquid pump (30), a plurality of spraying nozzles (2,3,4,5) and associated nozzle holders (see portion to the left and

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right of "31" in the Figure) connecting the spraying nozzles (2,3,4,5) to a carrier liquid line (see liquid line to the left and right of "34" in Figure), at least one active ingredient tank (see abstract lines 3-5; diluent tank), and several metering pumps (1) for delivering active ingredients connectable to the active ingredient tank (24), wherein there is at least one metering pump (1) on each nozzle holder (see portion to the left and right of "31" in the Figure) which is associated with and in flow connection with the nozzle holder (see portion to the left and right of "31" in the Figure).

In regard to Claims 3 and 4, Guenter also teaches where a mixing chamber (32) is on each nozzle holder (see portion to the left and right of "31" in the Figure) and a control unit (see abstract lines 23-29) calculates the active ingredient quantity to be metered in, in control pulses (transducer pulses), the metering pumps (1) have a clearly defined delivery for each working stroke and are driven corresponding to the control pulses (operation of "1").

In regard to Claims 5 and 6, Guenter further teaches where the control unit is capable of determining the number of control pulses as a function of a predetermined set value for an active substance concentration and a carrier liquid quantity instantaneously delivered by the carrier liquid pump and the metering pumps are capable of being driven by hydraulic pulses.



### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaplinsky (US 5,135,174) in view of Kahmann et al (US 6,037,010) and further in view of Boynton et al (US 4,171,710).

In regard to Claims 7-10, Chaplinsky teaches a sprayer for spraying agricultural liquids (apparatus system shown in Figure 1) with a carrier liquid tank (1), a carrier liquid pump (5), several spraying nozzles (21, 22, 23) and associated nozzle holders (22", "23" and "24" are held in "P") for connecting the spraying nozzles to a carrier liquid line (9,13), at least one active ingredient tank (2,3,4) and several metering pumps (6,7,8) for delivering active ingredients connectable to the active ingredient tank (2,3,4) characterized in that with each nozzle (22,23,24) holder ("22", "23" and "24" are held in "P") is associated with at least one metering pump (6,7,8) which is in flow connection with the nozzle holder (22", "23" and "24" are held in "P").

Although Chaplinsky as described above substantially teaches the present invention it fails to teach where the active ingredient supply line being provided with a compressed air connection so that during return operation active ingredient can be forced back into the active ingredient tank and where a vacuum connection on the active ingredient supply line remote from the active ingredient tank arranged so that during forward feed operation, active ingredient can be fed by vacuum from the active ingredient tank into the active ingredient supply line and to the nozzles.

However, Kahmann et al teach that it is known to have an active supply line being provided with a compressed air connection so that during a return operation, an

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active ingredient or substance (liquid paint) can be forced back into the active ingredient tank with the aid of compressed air (see last sentence of Abstract).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the present invention was made to provide the active ingredient line of the spraying system taught by Chaplinsky with the compressed air line of Kahmann et al in order to provide a manner in which a sprayed fluid can be conserved.

The combination of Chaplinsky in view of Kahmann et al as described above substantially teach the present invention with the exception of where a vacuum connection is on the active ingredient supply line remote from the active ingredient tank arranged so that during forward feed operation, active ingredient can be fed by vacuum from the active ingredient tank into the active ingredient supply line and to the nozzles

On the other hand, Boynton et al teach having a vacuum connection (see column 2, lines 44-49) on the active ingredient supply line (16) remote from an active ingredient tank (10) arranged so that during forward feed operation, active ingredient can be fed by vacuum.

Therefore it would have been obvious to one having ordinary skill in the art at the time the present invention was made to have provided the combination of Chaplinsky in view of Kahmann et al with the vacuum connection on the active ingredient supply line remote from an active ingredient tank arranged so that during feed operation, active ingredient can be fed by vacuum as taught by Boynton et al in order to provide a manner in which active ingredient can be proportionally supplied for dispensing.

One having ordinary skill in the art would recognize to put Boynton et al in a manner to permit the combination of Chaplinsky in view of Kahmann et al and Boynton et al to feed active ingredient from the active ingredient tank (sucked by the vacuum of Boynton et al) into the active ingredient supply line and to the nozzles.

One having ordinary skill in the art would also recognize that the combination of Chaplinsky in view of Kahmann et al and further in view of Boynton et al would also permit the compressed air connection to be provided downstream of the final metering pump in the active ingredient supply direction and the partial width of the active ingredient supply line with one compressed air connection (limitations of claims 8 and 9).

Chaplinsky also teaches where a control unit (32,33,34) is provided to calculate the active ingredient quantity to be metered in control pulses, the metering pumps (5,6,7,8) have a clearly defined delivery for each working stroke and can be driven to corresponding control pulses. The control unit (32,33,34) also has a number of control pulses as a function of a predetermined set value for an active substance concentration and a carrier liquid quantity instantaneously delivered by the carrier liquid pump (see column 3, line 31 thru column 4, line 21) and the metering pumps 6,7,8) can be driven in hydraulic pulses (pulses of content from tanks "2", "3" and "4").

Chaplinsky further teaches where the nozzle holders and the metering pumps are connected in series to the active ingredient line and are arranged in several partial widths and the partial widths are associated with active ingredient supply line and the sprayer has a mixing chamber and at least one metering pump.



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Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaplinsky (US 5,135,174) in view of Kahmann et al (US 6,037,010) and further in view of Boynton et al (US 4,171,710) and Wilson (US 4,315,421).

In regard to Claim 12, the combined device of Chaplinsky (US 5,135,174) in view of Kahmann et al (US 6,037,010) and further in view of Boynton et al (US 4,171,710) substantially teach the present invention with the exception of where a float valve is connected to the final metering pump.

However, Wilson teaches having a float valve ("36" is operatively connected through controls with "42") connected to a metering pump (metering pump "42"; see column 4, lines 56-61).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the present invention was made to have provided the combination of Chaplinsky in view of Kahmann et al and further in view of Boynton et al with the float valve that is connected to a metering pump as taught by Wilson in order to automatically control the fluid levels within a system.

One having ordinary skill in the art would further recognize that the float valve of Wilson can be positioned at the final metering pump within the combination of Chaplinsky in view of Kahmann et al and further in view of Boynton et al and Wilson.

### ***Response to Arguments***

#### **Rejection under 35 USC § 103**

Applicant's arguments filed 03/16/2009 have been fully considered but are moot in view of a new grounds of rejection to Chaplinsky in view of Kahmann et al and newly discovered references to Wilson and Boynton et al.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Phelps (US 3,618,862) drawn to an apparatus for controlling the dispersal of liquid in air nozzles.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor E. McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T. E. M./  
Examiner, Art Unit 3752

/Len Tran/

Supervisory Patent Examiner, Art Unit 3752